Appl. No. 10/064,972
Amdt. dated March 28, 2006
Reply to Office action of January 03, 2006

Amendments to the Specification:

Please replace Paragraph [0004] with the following amended paragraph:

[0004] Swing differential signaling is a low-voltage technology used in data transmission
systems. The use of low-voltage differential signaling for data transmission has grown
5   rapidly due to the low power dissipation, high signal-to-noise ratio, low EMI emission,
and high transmission speed characteristics inherent in such a system. ~~Today"s~~ Today's
differential signaling systems usually have a swing, or peak-to-peak amplitude of 600 mv
or less, depending on the particular derivation in use.

10   **Please replace Paragraph [0006] with the following amended paragraph:**

[0006] The bias 12 controls the inputted current of the current source 14 to fall within a
specified range. When the inputted data is high (thus data bar is low) transistors 24 and 22
are turned on allowing current to flow from the current source 14 through transistor 22 to
15   a node B. From the Node B, the current VoutP flows to the resistor 18. From the resistor
18, the current VoutN flows to a node A and through the transistor 24 and the current
source 16 to the ground 32. When the inputted data is low (thus data bar is high)
transistors 20 and 26 are turned on allowing current to flow from the current source 14
through transistor 20 to the node A. From the node A, the current VoutN flows to the
20   resistor 18 (R2). From the resistor 18, the current VoutP flows to the ground 32 via the
node B, the transistor 26, and the current source 16. The outputted voltage when data is
high is equal to ~~VoutP-VoutN~~ VoutP-VoutN which equals I*R2 and corresponds to a "1"
in the differential signal. The outputted voltage when data is low is equal to ~~VoutP-VoutN~~
VoutP-VoutN which equals -I*R2 and corresponds to a "0" in the differential signal.

25   **Please replace Paragraph [0007] with the following amended paragraph:**

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[0007] Currently there are at least three major types of swing differential signaling systems commonly used. First, is a Low Voltage Differential Signaling (LVDS) system with current swings in the 247 mv-454 mv 247mv-454mv range. A swing of 350 mv would be considered typical for LVDS. Next is a Mini-LVDS system with current swings

5   in the 300 mv-600 mv 300mv-600mv range, typically about 450 mv. Thirdly, a Reduced Swing Differential Signaling (RSDS.TM.) system generally supports a current swing of 200 mv but includes a current swing range of 100 mv-400 mv 100mv-400mv.

Please replace Paragraph [0019] with the following amended paragraph:

[0019] The bias PBIAS supplied by the control circuit 52 controls the inputted current of

10   the current source 54 to fall within a specified range. When the inputted data is set high (thus data bar is set low) transistors 64 and 62 are turned on allowing current to flow from the current source 54 through transistor [[22]] 62 to a node B. From the Node B, the current VoutP flows to the resistor 58. From the resistor 58, the current VoutN flows to a node A and through the transistor 64 and the current source 56 to the ground 72. When

15   the inputted data is low (thus data bar is high) transistors 60 and 66 are turned on allowing current to flow from the current source 54 through transistor 60 to the node A. From the node A, the current VoutN flows to the resistor 58. From the resistor 58, the current VoutP flows to the ground 72 via the node B, the transistor 66, and the current source 56. The outputted current when data is high is equal to VoutP-VoutN

20   VoutP-VoutN which equals I*R2 and corresponds to a "1" in the differential signal. The outputted current when data is low is equal to VoutP-VoutN VoutP-VoutN which equals -I*R2 and corresponds to a "0" in the differential signal.

Please replace Paragraph [0021] with the following amended paragraph:

[0021] The control circuit 80 comprises transistors 92, 94, inverted transistors 82, 84, 86,

25   88, 90, three current sources 11, 12, 13, a ground 96, and an electrical bias PBIAS BIAS. In this example, the ground 96 is to be used as a bias PBIAS for the driver circuit 50. In

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addition, in this example, the control circuit 80 comprises four inputs A, B, C, D, for
receiving control indicators to control the current outputted to the ground 96. It is obvious
that a single control indicator can be used to select between [[to]] two outputted current
levels and the present invention is not to be limited by the number of control indicators
5   used. In this example, four control indicators are used for convenience to illustrate a
useful application of the present invention.

Please replace Paragraph [0023] with the following amended paragraph:

[0023] If the current sources I1, I2, I3 are properly chosen, the sum of currents of one or
more current sources can be used as a bias to cause the driver circuit 50 to generate a
10   differential signal in a predetermined voltage range. The voltage range generated can be
altered merely by changing one or more of the conditional indicators A, B, C, D. For
example, the sum of the currents I1 and I2 (as in the first example) can generate a Low
Voltage Differential Signaling (LVDS) differential signal with current swings in the ~~247-
mv-454 mv~~ 247mv-454mv range. A Mini-LVDS differential signal with current swings in
15   the ~~300 mv-600 mv~~ 300mv-600mv range can be generated by adjusting the control
indicators A, B, C, D appropriately, say to sum currents I1 and I3 (as in the second
example). Other combinations of the control indicators A, B, C, D can be used to generate
a Reduced TM Swing Differential Signaling (RSDS.TM.) differential signal with a
current swing in the range of ~~100 mv-400 mv~~ 100mv-400mv.

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